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**Measurement of Near- $\omega_p$  Light as Evidence of the  
Electromagnetic Decay Instability**

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We report on experiments which measure electromagnetic emission near the plasma frequency from laser produced plasmas at the Nova laser facility. The measurement is motivated by earlier studies<sup>1</sup> which indicate that the SRS generated electron plasma wave is stimulating a secondary decay involving an ion wave and a third wave. The Electromagnetic Decay Instability (EDI) is a secondary decay process in which the electron plasma wave decays into both an ion wave and a light wave near  $\omega_p$ . Because this instability inhibits the growth of SRS it may affect the fraction of scattered light in a wide variety of laser-plasma experiments. Experiments to measure both SRS and EDI spectra in both thin foils and gas-filled targets will be discussed.

<sup>1</sup>R. K. Kirkwood et. al., submitted to Phys. Rev. Lett. and also at this conference.

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